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04/25/2011 04:08 PM

To Jill Bloom
cc Chad Schulze, (b) (6)
bcc
Subject Proposed Drift Research/Complex Terrain/Forestry Aerial Applications

Jill,
Chad Schulze of Region Ten has been a valued contact in listenting to and developing information on risk assessment for persons in Western Oregon (Pitchfork Rebellion, et al) concerned about heavy aerial application by large forest owners adjacent to and almost always uphill of thier valley residences and farms. I know you have been in on a few of the conference calls and are generally aware of the concerns and potential for problems of chemical movement and trespass in this area. As a result of a number of well investigated and publicized drift incidents where documented movement was established by scientific sampling and analysis in EPA certified labs, we have several detailed case stuides which outline the nature, and extent of the problem, and suggest which risk factors are significant contributors when this happens. As you migh expect, the extreme topographic relief and related weather conditions are at the top of that list. I am working with experts at UCD, OSU and the Forest Service to develop a special Symposium on this issue for the 2012 Western Society of Weed Science meeting in March at the annual meetings in Reno, NV.
Concurrent with that, Dr. Ken Giles of UCD (holder of over a dozen patents on nozzles and internationally known drift expert) and I are working with OSU and private firms to generate a detailed proposal for both EPA and CDC (Dr. Richard Kauffman) to consider funding site specific, field scale scientific research to prove/disprove our hyposthesis about the influence of landform (topographic relief), weather, and high release heights typical for forestry and other work in steep, uneven, hilly terrain. As you must be aware, the EPA has relied heavily on the now 20 year old SDTF work, which was of extremely limited nature, and confined to flat land in Texas. The SDTF data also used "old" technology in drift detection - receptor cards and dye. Our research would absolutely MIMIC commercial work, with use of the same helicopter type which dominates this market (Bell G-47-3 soloy conversion or OH-58/206, both of which use the same Allison C20-B turbine engine and transmission), and full loads and actual application of typical tank mix field rates of herbicides. To insure accurate findings, a combination of high volume air sampling pumps with traps and bio-indicators (sensitive greenhouse potted plants) will be utilized up to 3 miles from the application site and exposed both during and for 24 hours following the test applications. Resin traps from the high volume air samplers would be lab run for the pesticides sprayed, and the bio-indicators removed to a greenhouse for grow out to show exposure via typical symptom development and ultimately in suttle measurements at low dose exposures, by measuring leaf area, height, dry weight, etc.
We are coming along with a program which was discussed in early February with Chad his EPA group and Dr. Kauffman from CDC at the Region X office in Seattle. I would like to visit with you on the telephone at your convenience to determine some more specifics of exactly how to tailor a specific proposal which your agency, and CDC could fully evaluate. In closing I would point out just two factors which I believe cause this project to be worthy of serious consideration in this time of critical budgets and fiscal restraint:
1. We have no current research utilizing high sensitivity now possible with both the analytical and bio-indicators which looks at drift in the critical complex terrain which covers all of western forestry work, and a very significant part of cropping all across the country - anywhere there is significant topographic relief. The models derived from SDTF work and related research is aged, and was not designed or executed to give us answers. The AGDISP and AGDRIFT models only allow for a single input for slope (no slopes are ever even) and are limited to a maximum of 20 degrees. Many of the slopes in Western Oregon average 45 degrees and go up to 70 degrees. We have no data to support labled applications on these slopes - either direct or by modeling. Models are only good if "ground truthing" is done to prove their accuracy...
2. In addition to sensitive and organic crops, there are many serious allegations of both acute and chronic exposures to humans in Western Oregon, which have been investigated and some

documentation gathered by Chad and his team at Region X. This is very troubling to Dr. Kauffman at CDC, who has expressed his concerns to me.

EPA is in a real bind on this deal, because of the rather loose language on the herbicide and other pesticide labels. ODA, who do the investigative work in the field on behalf of EPA, cannot cite operators for spraying at elevations of over 100' from the ground, since the label language permits or fails to prohibit such activity. We have plenty of digital images and video to support exactly what is going on, and again the models do not allow for a release height above I think 30' from terrain. Consider also, on a 45 degree slope, if the inboard boom is 50' from the ground, with the rotorcraft following the contour line while spraying the outboard boom is twice that far from the ground, or 100'.

I am best reached on my mobile phone, (b) (6) ; I am an early riser, and work weekends so please call when you can, I look forward to discussing this subject with you in more detail,

Best Regards,

Stuart A. Turner, CPAg